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REMARKS

Examiner has rejected Claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over “Kachnic (5928578) in view of Williamson (5514309).” In response, Applicant has amended the claims, and respectfully traverses Examiner’s rejection.

The vision system of Kachnic ‘578 does compare an actual image with a stored image, but it is an actual image of an operational part forming mold and a stored memory image of an exemplary empty mold, wherein the purpose and functionality of the device is directed toward evaluation of the presence or absence of a formed part, to avoid the need for excess ejection sequence time. The present device, however, is unlike the Kachnic ‘578 device in that each could even be used with the other, in order to “doubly” enhance the efficiency of the system. The present device doesn’t seek to decrease the cycle time by minimizing unnecessary ejector rod action; the present device seeks to decrease cycle time by minimizing part cooling time **prior to ejection, within the mold**. The technical solution offered by the present application involves the use of thermal radiation and does not generally or typically involve a visual image. It is focused on temperature measurements and beneficial operational information that may be derived therefrom. In the present application, an infrared thermographic sensor is used to collect measurements and the thermal radiation is converted into temperature values via radiometric algorithms, in order to use the surface temp as a basis for estimating the center temp to optimize the system. The target benefit is to decrease cycle close time, that is, to use the surface temperature of the part to determine the core temperature of the part and to calculate specifically in order to avoid a mold close time that is too short or too long.

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Williamson '309 also seeks to increase efficiency, a common goal of a large majority of molding machine art because small changes can reap large economic benefits through increased throughputs; however, rather than focus on perfecting the length of the time period that the part is within the mold, Williamson '309 focuses on the length of the cooling period **after the part is removed from the mold.** (*See, e.g. Col. 1, lines 34-54*, discussing that when you take the parison out, post molding modification of parison shape can occur, and the precooling can enhance stability, but disadvantageously requires that the parison remain in the mold for a longer period of time.) Thus, Williamson '309 **removes** the parison from the mold and applies a flow of cooling fluid to internal and external surfaces thereof, *Col. 2*, wherein the first step of the claimed method is “receiving said molded workpieces **upon ejection from said molding machine** on a receiver means.” *Col. 8, Claim 1.* The “heat sensor 33” referenced by Examiner is thus evaluating the temperature of the parison **after it has been removed from the mold**, in order to influence the flow of cooling fluid thereto, and has no influence or operational significance relative to the time period that the parison remains in the mold. Applicant’s disclosure specifically notes system optimization “without necessitating adjusting coolant flow rates...” *Pg. 10, ¶2.*

Thus, Applicant’s device, the sensor collects thermographic data from the surface of the part **while it remains in the mold**, and utilizes that data to calculate the temperature of the center of the part and to compare that to an optimized core temperature to direct and minimize the length of time in mold for maximized throughput efficiency, that is, allowing the part to be ejected essentially precisely at the point of optimized formation. Applicant’s

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device thus avoids post-mold shape modification by ensuring that the part reaches an optimized temperature **prior to ejection** from the mold, and enhances throughput by ensuring that excess time in the mold is not required to ensure satisfactory completion of part formation, thereby avoiding both wasted parts and wasted time.

Applicant has amended Independent Claims 1-3 to more succinctly define that the data acquisition occurs while the part remains in the mold, prior to exit therefrom, and that the acquired data is thereafter analyzed and adapted for direction of mold closure time parameters for following cycles. “A different situation exists where the solution is obvious from prior art which contains the same solution for a similar problem,” *In re Wiseman*, 596 F.2d 1019, 1022 (CCPA 1979)(emphasis in original); however, such is not the case with the references cited. Neither reference seeks to shorten or optimize process time by analyzing part parameters while the part remains in the mold.

Moreover, modifying Kachnic ‘578 or Williamson ‘309 to function as the present device would change the principle of operation of each. “If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” *In re Ratti*, 270 F.2d 810 (CCPA 1959). To so adapt Kachnic ‘578 would eliminate the skip-eject benefits thereof, and would require Williamson ‘309 to allow the part to remain in the mold, which would essentially render both devices non-functional.

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Finally, “to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” *In re Royka*, 490 F.2d 981 (CCPA 1974). As noted, applicant has amended Claims 1-3, as noted above, to clarify that the collection of data for Applicant’s device occurs while the part remains in the mold. This is not taught in the art; thus, Applicant respectfully asserts that the presently amended Independent Claims are not obvious. Further, because “[i]f an independent claim is nonobvious under 35 USC 103, then any claim depending therefrom is nonobvious,” *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1985), wherein new dependent Claims 4-20 are also not obvious.

Applicant believes that the foregoing amendments and arguments establish that Applicant’s claimed apparatus and method is non-obvious, thereby placing the rejected independent claims 1-3, and all remaining depending claims in condition for allowance.

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CONCLUSION

The above amendments are corrections to form and thus, no new matter was added. In light of the above amendments and arguments, Applicant respectfully believes that the Claims are now allowable. Should there be any questions or concerns, the Examiner is invited to telephone Applicant's undersigned attorney.

Respectfully submitted, this 16th day of October, 2008.

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